Measuring the Quality of Work Using the Rasch Model

Utilizzo del modello di Rasch per la misura della qualità del lavoro

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1. Measuring the quality of work

One of the main goals of social and economic research is to measure the quality of work. The job satisfaction (JS) represents one of its proxies and its quantification is one of the aims of the paper. A statistical tool able to measure latent traits, such as JS, is the Rasch model, which converts raw scores into linear and reproducible measures. The Rating Scale model (Andrich, 1978) is one of its extensions in case of polytomously scored items and it is the one used in the analysis. The main aim of this paper is to compare the estimates from the complete (benchmark) and partial (obtained considering cooperative and worker characteristics) worker samples in order to get information on the degree of satisfaction attributed to each aspect evaluated taking into account these characteristics. The data come from the Survey on Italian Social Cooperatives (ICSI 2007) carried out in 2007. 312 social cooperatives (type A: 71.8% and type B: 28.2%)\(^{(1)}\) were sampled from four geographic areas (North-West: 39%, North-East: 18.3%, Center: 18.3% and South: 24.4%) and 3968 paid workers (female: 74.2% and male: 25.8%; age distribution: min=18, \(Q_1=30\), \(Q_2=37\), \(Q_3=45\), max=74) answered the survey (Carpita, 2007). The benchmark mean JS is 0.58, higher than the item mean difficulty set to 0; the workers are altogether satisfied by their job. The item difficulty estimates for the benchmark and partial worker samples are plotted in Figure 1. Higher points on the graphs mean higher level of satisfaction. They provide satisfaction profile that remain quite consistent across different subgroups of workers. With reference to the comparison between benchmark

\(^{(1)}\) A social cooperative of type A manages social-assistance and educational services whereas a social cooperative of type B runs activities all focused on training and job finding for disadvantaged people.
and worker subgroups, where the analysis of responses revealed that an item was easier (more difficult) to endorse by the subgroup than by the benchmark, more satisfaction (less satisfaction) was implied for the subgroup. The mean JS of a type B worker (0.67) is higher than the one of the benchmark and a type A worker (0.56). Workers of type A cooperative are significantly more satisfied than the benchmark with variety in work, relations with colleagues and end users and less satisfied with pay, social security protection and career promotion. Workers of type B cooperative are significantly more satisfied than the benchmark with pay, social security protection, working environment, career promotion and relations with the cooperative and less satisfied with variety in work, relations with colleagues and end users. The mean JS of the workers operating in South (0.84) is higher than the one of the benchmark and the remaining workers (NE=0.53; NW=0.58 and C=0.43). Workers operating in North-East are significantly more satisfied than the benchmark with social security protection, work organization and variety in work and less satisfied with social recognition, relations with the cooperative and superiors. Workers operating in North-West are significantly more satisfied than the benchmark with personal achievement, social security protection and decisional independence and less satisfied with recognition of work done and utility for end users. Workers operating in Center are significantly more satisfied than the benchmark with recognition of work done, utility for end users and relation with colleagues and less satisfied with pay and social security protection. Workers operating in South are significantly more satisfied than the benchmark with pay, relations with the cooperative and superiors, utility for end users and social recognition and less satisfied with variety in work, relation with colleagues, personal achievement, work organization and decisional independence. The mean JS of a male (0.54) and female (0.60) worker is close to the benchmark one. Male workers are significantly more satisfied than the benchmark with career promotion and relations with the cooperative and less satisfied with relations with superiors and end users, whereas female workers are significantly more satisfied than the benchmark with relations with end users and less satisfied with career promotion. The mean JS of the younger workers (I=0.49; II=0.52) is lower than the one of the older workers (III=0.62; IV=0.66) which is higher than the benchmark one. Workers with age below $Q_1$ are significantly more satisfied than the benchmark with personal achievement, relations with colleagues and variety in work and less satisfied with work organization, social security protection and involvement in cooperative decisions. Workers with age between $Q_1$ and $Q_2$ are significantly less satisfied than the benchmark with pay and social recognition. Workers with age between $Q_2$ and $Q_3$ are significantly more satisfied with work organization and less satisfied with variety in work and utility for end users. Workers with age bigger than $Q_3$ are significantly more satisfied with social security protection and social recognition and less satisfied with personal achievement, relations with colleagues and variety in work.

**References**
